

Appln. No. 10/687,740
Reply to Office action of September 23, 2005
Response dated December 22, 2005

REMARKS

This paper is submitted in response to the Office Action dated September 23, 2005. Claims 1-3 are pending in the application and have been rejected. Claim 2 has been amended to recite that the organic material for a carbonized product may be "used for producing activated carbon for an electrode of an electric double-layer capacitor." No new matter has been added. New claim 4 has been added to recite the characteristics of the oxygen cross-linking treatment recited in claim 1. Support for new claim 4 is found throughout the specification as originally filed. (*See e.g.*, Specification page 7 lines 23-25). No new matter has been added.

Claim 1 has been rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting the activation step to produce an activated carbon. The Examiner states that the claimed process is supposed to produce an activated carbon, but does not include an activation step and, therefore, only produces a carbonized product. However, Applicants respectfully submit that the claims are directed to a process for producing a carbonized product. The recitation "used for producing activated carbon for an electrode of an electric double-layer capacitor," in the preamble is merely a statement of purpose or intended use of the carbonized product, which should not be considered a limitation of the claim. *See* MPEP 2111.02. Therefore, Applicants respectfully submit that claim 1 does not require an activation step. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 112, second paragraph.

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The Examiner has rejected claims 1-3 under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter applicant regards as the invention. In particular, the Examiner alleges that the phrase "optical anisotropic rate" is unclear and suggests amending the phrase to "optical anisotropic content." However, the phrase "optical anisotropic rate" is explicitly defined in the specification. (*See e.g.*, Specification paragraph 28). Therefore, Applicants respectfully submit that the phrase "optical anisotropic rate" would be clear to one skilled in the art. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-3 under 35 U.S.C. § 112, second paragraph.

Claim 1 has been rejected under 35 U.S.C. § 103 as obvious over U.S. Patent No. 4,986,893 to Seo *et al.* ("Seo"). The Examiner alleges that Seo discloses a process for producing pitch that can be activated with only subtle variations in operating parameters, which are obvious adjustments to provide the best pitch product. In particular, the Examiner states that the process of Seo discloses a process raising speed of 5°C/min, *which is slightly lower than the claimed rate.*

However, claim 1 of the present invention recites a temperature-raising rate *greater, or equal to, 500°C/hour*. If the temperature-raising rate is lower than 500°C/hour, the mesophasing of the organic material advances. (*See* Specification, paragraph 21). According to the disclosure of the present invention, the dehydrogenating reaction is caused by increasing the temperature-raising rate and by conducting the carbonizing treatment at a high temperature for a short time, thereby hindering the advance of the mesophasing and forming a large number of fine pores. (*See*

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Specification, paragraph 21). Seo does not disclose or suggest a temperature-raising rate greater, or equal to, 500°C/hour to optimize the carbonizing treatment to hinder the advance of mesophasing. Thus, one skilled in the art would not be motivated to subject the organic material to a carbonizing treatment, as recited in the present invention.

Furthermore, Seo discloses using a temperature raising rate within a lower range of 0.5° to 5°C /min. For example, Seo discloses that the pitch fiber is subjected to infusibilization by heating to 230°C to 300°C at ordinarily a temperature-raising speed of 0.5° to 5°C /min in an oxidative gaseous atmosphere and maintaining the fiber for 30 to 60 minutes. (*See* Seo, col. 7 lines 13-17). In addition, each Example disclosed in Seo uses a process in which the temperature is raised at a rate of 5°C /min. (*See* Seo, Examples 1-4 and Comparative Examples 1-3). Moreover, Comparative Example 2 discloses that fibers heated to about 900°C at a temperature-raising speed of about 5°C /min in a nitrogen gas atmosphere resulted in cracks in the carbon fibers. (*See* Seo, col. 14, lines 20-24). Therefore, the disclosure of Seo would lead one skilled in the art to use a lower temperature raising rate, within the range disclosed in Seo, rather than raising it. Accordingly, Seo does not disclose or suggest using a temperature-raising rate *greater, or equal to, 500°C/hour*, as recited in the present invention.

In addition, Claim 1 of the present invention recites, *inter alia*, "subjecting a condensed polycyclic aromatic pitch having an optical anisotropic rate Oa in a range of $1\% \leq Oa \leq 90\%$ and a softening point Ts in a range of $140^{\circ}\text{C} \leq Ts \leq 260^{\circ}\text{C}$ to an oxygen crosslinking treatment at a heating temperature Th set at $Th \leq 260^{\circ}\text{C}$ to provide an organic material for a carbonized product having a light component content L equal to

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or larger than 14.5% by weight." (Emphasis supplied). In contrast, Seo explicitly teaches removing the volatile components through heat treatment. (See Seo, claim 4 step 4, col. 9 lines 3-5; col. 10, lines 6-8; col. 11, lines 12-14; and col. 12, lines 16-19). Therefore, Seo does not teach or disclose an organic material for a carbonized product having a light component content L equal to or larger than 14.5% by weight, as claimed in the present invention.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. § 103 as obvious over Seo.

Claims 2 and 3 have been rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over Seo. The Examiner has stated that although a light component of the pitch greater than 14.5% is not specifically disclosed, it would be inherent in a pitch with a low molecular weight.

As stated above, Seo explicitly teaches removing the volatile components through heat treatment. (See Seo, claim 4 step 4, col. 9 lines 3-5; col. 10, lines 6-8; col. 11, lines 12-14; and col. 12, lines 16-19). Therefore, a carbonized product having a light component content L equal to or larger than 14.5% by weight, as claimed in the present invention, would not be inherent in the pitch disclosed in Seo. Moreover, in view of the disclosure of removing the volatile components through heat treatment, one skilled in the art would be lead away from the present invention in which an organic material for a carbonized product having a light component content L equal to or larger than 14.5% by weight is provided. Accordingly, Applicants respectfully request reconsideration and

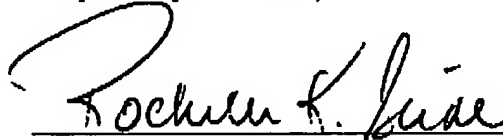
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withdrawal of the rejection of claims 2 and 3 under 35 U.S.C. § 102(b) as anticipated by
or, in the alternative, under 35 U.S.C. § 103 as obvious over Seo

In view of the foregoing reconsideration and allowance of pending claims 1-3 is
respectfully requested.

Applicants believe that no additional fees are required in connection with this
response. However, if additional fees are required, the Commissioner is hereby
authorized to charge any additional payment, or credit any overpayment, to Deposit
Account No. 01-2300, referencing Docket Number 107348.00376.

Respectfully submitted,



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